REMARKS

Applicants thank the Examiner for his help in preparing this response. Applicants have amended claims 1, 16, 18, and 23 to place them in condition for allowance and canceled claims 49-68 without prejudice. Applicants respectfully request entry and consideration of new claim 69. Support for new claim 69 is found on page 4, lines 23-29, on page 20, lines 1-8, on page 31. lines 1-16, and on page 22, lines 20-30, of the specification.

Applicants have amended the title of the invention and Table 1 (attached hereto as substitute pages 32-35) of the specification as requested by the Examiner. Inadvertent misspellings in Table 1 have been corrected as shown in the marked-up version of the original table (attached). No new matter has been introduced by these amendments to the claims and specification.

TITLE

The Examiner objects to the title of the invention as not descriptive.

Applicants have amended the title of the invention to recite, "Gene Specific Arrays, Preparation and Use" and respectfully request withdrawal of the objection.

NEW MATTER

The Examiner rejects claims 49-68 under 35 USC § 112, first paragraph, as containing subject matter not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed had possession of the claimed invention. The Examiner states that the limitation residing in the word "only" is not supported in the specification.

Applicants have canceled claims 49-68 so the rejection is moot.

LACK OF ENABLEMENT

The Examiner rejects claim 18 under 35 USC § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains or with which it is most nearly connected to make and/or use the invention. The Examiner states that claim 18 is not directed to generic sequences but rather to specific sequences defined by the primer pairs cited in the claim and that defined chromosomal location for each probe needs to be cited in the specification. The Examiner suggests that an amendment accompanied by a declaration by the agent would be sufficient to overcome lack of enablement.

Applicants have amended Table 1, which is attached hereto, as Substitute Pages 32-35. The undersigned agent, Lynn E. Murry, declares that I have amended Table 1 to include chromosomal location previously incorporated by reference. Columns 1-6 are as filed in the specification on pages 32-35; and column 7 presents the human chromosomal location for each STS/gene. In addition, the inadvertent typographical errors have been corrected as shown in the attached Marked-Up version of the original table,

The amended table contains only material that would be readily available to one of skill in the art using GenBank and the STS/gene identifier presented in Table 1 as filed. The GenBank references for each of the STS/gene identifiers and chromosomal locations are attached. As the amendatory material consists of the same material incorporated into the specification by reference, no new matter has been introduced by the amendment of Table 1. With this declaration and the amendment of Table 1, Applicants respectfully request the withdrawal of the rejection of claim 18 under 35 USC § 112, first paragraph.

PRIOR ART BASED REJECTIONS

The Examiner has rejected claims 1-7, 9-17, 19-22, 49-55 and 57-68 under 35 USC §102 (f) or (g) prior art under 35 USC § 103 (a) as being unpatentable over Duggan et al. (1999, Nat Genet 21(S):10) in view of Schena et al. (1995, Science 270:467), and taken further in view of Wilcox et al. (NAR 19:1837). The Examiner states that the rejection is expanded regarding STS probes. The Examiner has also rejected claims 1-17, 19-22, and 49-68 under 35 USC § 103 (a) as being unpatentable over Duggan in view of Schena taken further in view of Wilcox and taken still further in view of Fodor et al. (USPN 5,510,270).

Applicants have amended claim 1 and canceled claims 49-68. For there to be a prima facie case of obviousness, both the suggestion and expectation of success must be found in the prior art and not in Applicant's disclosure. Since none of the references individually or collectively suggest an array containing a plurality of chromosomal location-based human polynucleotides amplified using the disclosed primers, Applicants aver that the references do not render obvious the subject matter of pending claims. It could only be through the use of hindsight that one would have had the motivation to use the human polynucleotides of known chromosomal location and known disease associations to produce and use the arrays claimed herein.

Hence the Examiner has not presented a prima facie case of obviousness against pending claims 1-7, 9-17, and 19-22; and Applicants respectfully request that the rejection of claims 1-7, 9-17, and 19-22 under 35 USC §102 (f) or (g) under 35 USC § 103 (a) be withdrawn.

CONCLUSION

Applicants believe that the application is now in condition for allowance. If a phone call would expedite prosecution, the Examiner is cordially invited to call the undersigned agent at 479-973-0734.

Clingenix Inc.

Date: 16 May 2003

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MARKED UP VERSION - ATTACHED TO SUBSTITUTE PAGES 32-35

Table 1: STS Tags and ~~Exemparly~~ Exemplary Primer Pairs

	GENE	STS NAME	STS acc #		SEQ ID NO:
1.	Glucokinase regulator (GCKR)	SHGC 35430	G 29810	Forward Primer: AACCCATGTTTCTGGGTGG	1
				Reverse Primer: CGGTGAGAGTAGAAACCACTAGG	2
2.	Interleukin receptor, type II precursor	WI 11083	G22557	Forward Primer: TTTCATTTATTTCACTTGGGATAGG	3
				Reverse Primer: CTTGGTTTTGGGGGGAATAT	4
3.	Inteleukin1 receptor, type I precursor	SHGC 35324	G28576	Forward Primer: GCCAAGAGTTCTTTAGGTGCC	5
				Reverse Primer: TTTTTAAAAGATCTTCCCAAGCC	6
4.	Human insulin-like growth factor binding protein-5 (IGFBP5)	SHGC 11498	G14572	Forward Primer: GAATTAAATGAGGGCTGAAACG	7
				Reverse Primer: CATGTGCATATTTCATTCCCC	8
5.	Protein Phosphatase 1, catalytic subunit, beta ~~isoform~~ isoform (PPP1CB)	WI 7312	G06545	Forward Primer: ATGTGATTATGTGGTACCTTGGC	9
				Reverse Primer: AATCGTATACAACATTCACATGGC	10
6.	Human Protein tyrosine phosphatase	WI 9369	G07262	Forward Primer: TGGACATTTCATACCTGTGCA	11
				Reverse Primer: ACCTACCCTGAGGTCCGTCT	12
7.	Hexokinase-1 (HK1)	SHGC 11749	G14649	Forward Primer: TTTCCTTTATTTGGAAAAGTCAGC	13
				Reverse Primer: TGCTAACCCCGTCTGCTC	14
8.	Arachidonate 5-lipoxygenase (ALOX5)	WI 9162	G07156	Forward Primer: TTCCATTTATTCTTTGATCTTCAGG	15
				Reverse Primer: GCTGGGTGTGGACAGGAC	16

9.	Protein tyrosine phosphatase 2C	SHGC 30316	G27080	Forward Primer: CTAGAAGACAGCAGTGACACTTCC	17
				Reverse Primer: TGGGGTAGTTTGGCTGCC	18
10.	Placental Protein II precursor	SHGC 9798	G11327	Forward Primer: GGAGAGGACTGGAAGGGATC	19
				Reverse Primer: TGCCAAAATTCTAGAGGATAAAGG	20
11.	Insulin like growth ~~fsctor~~ 1 somatomedin factor (~~somatomedia~~ C) (IGF1)	WI 7033	G06363	Forward Primer: ACAGGAGGATTAAACAGACAGAGG	21
				Reverse Primer: TTATTTAATTGTGTTTTAGAGGGCA	22
12.	Human Protein tyrosine Kinase	WI 9296	G07226	Forward Primer: TGCTGCATAAATCACTTATCGG	23
				Reverse Primer: GAACACAAATTTCTGAAAGGTGC	24
13.	Glycogen synthase (human liver)	WI 7963	G06781	Forward Primer: CATGTGCTGCATGAAGAGCT	25
				Reverse Primer: AAGCTGCATAAATAGTAAGCAAAGG	26
14.	Protein tyrosine Phosphatase	SHGC 31640	G27089	Forward Primer: TAATCAAATTACCCACCCAAGG	27
				Reverse Primer: GCCTTAGGCTGTGTGATAAACC	28
15.	Mannose receptor (M6PR)	WI 7191	G06444	Forward Primer: ATAATTGCTTGTTTTCTAGCCTGG	29
				Reverse Primer: TAATTGGAGTGGAAATAAAAACTGG	30
16.	Glutathione S-transferase, microsomal	WI 7728	G06674	Forward Primer: ACAACTCAACATCCAGTTGGC	31
				Reverse Primer: TTCATGTCTGTTTCAGCAGTATTG	32
17.	Glucose ~~trasproter~~ transporter type 3, brain	SHGC 31620	G27088	Forward Primer: CAGGATGAACCCAGGACG	33
				Reverse Primer: GGCAAAGTTGTCATGTGCC	34
18.	Protein phosphatase 4 (formerly	WI 9235	G07192	Forward Primer: TTCCTCAGACGGAGGCTG	35

	x) catalytic subunit (PPP4C~~δ~~ ε)			Reverse Primer: GGAACATGGAGCTAGGTCTCC	36
19.	Low density lipoprotein receptor precursor	SHGC15376	G15092	Forward Primer: GTTTAAAAAGTGACACCCATCTCC Reverse Primer: TGCCTCTGAAATGCCTCTTC	37 38
20.	Lecithin cholesterol acyltransferase	WI 10276	G11801	Forward Primer: TTATTGGTGGTGTCTGATGAGC Reverse Primer: GGCTTCATCTCTCTTGGGG	39 40
21.	Interleukin 4 receptor (IL4R)	WI 9023	G07084	Forward Primer: AAAACTGAGGCCCTTGGG Reverse Primer: ATGCCTTGGGCAGTTACAAC	41 42
22.	Regenerating islet-derived-1 alpha (pancreatic stone protein, pancreatic thread protein) (REG1A)	WI 9197	G07172	Forward Primer: CATCTCTCCAACTCAACTCAACC Reverse Primer: TTTAGGGTTCCAAAGACTGGG	43 44
23.	Interleukin1, beta (IL1B)	WI 7848	G05863	Forward Primer: TTCTGAAAATATAACCAGCCATTG Reverse Primer: ACCATTTCACATTTATTTTGAAAGC	45 46
24.	Insulin like growth factor binding protein 5 (IGFBP5)	SHGC 11498	G14572	Forward Primer: GAATTAAATGAGGGCTGAAACG Reverse Primer: CATGTGCATATTTCATTCCCC	47 48
25.	Insulin receptor substrate-1 (human skeletal muscle)	WI 9260	G07206	Forward Primer: GTGACACCAGAATAATGAGTCTGC Reverse Primer: AACCCATTCTCTCATGACACG	49 50
26.	Alkaline phosphatase, placental (Regan ~~isoryme~~ isozyme) (ALPP)	WI 8964	G07054	Forward Primer: AGTCATGGCAGCACCTGAG Reverse Primer: ACCACAGCAGCCTCCTTG	51 52

27.	Human DNA dependent protein kinase catalytic subunit (DNA-PKCs)	SHGC 35517	G29848	Forward Primer: CTTGGTTGGCAGCATTCC Reverse Primer: TGACTTAATACTTTGGTAAGCCTGG	53 54
28.	Lipoprotein lipase (LPL)	WI 9031	G07089	Forward Primer: TTACAAAACATACCCAGTGTTTGG Reverse Primer: CTTTTTAGTGCTTGAGACTGTCTCC	55 56
29.	Human MAP kinase phosphatase (MKP-2)	SHGC 35388	G28599	Forward Primer: GCAGAAAGTTGGGACTGAGC Reverse Primer: TGAAACTGACACATAAACCAAACC	57 58
30.	Protein Kinase C, theta type	SHGC 9690	G11293	Forward Primer: CCCCATGTGACTTTATCTGTAGC Reverse Primer: AGTCTTGAGACGTCTGTACTCCG	59 60
31.	Insulin degrading enzyme	UTR 9770	G13262	Forward Primer: ATTCCTGAGTCTTCCAGAGCC Reverse Primer: ATGACATTTGACAATTTTTTGTTTG	61 62
32.	Phosphofructokinase, muscle (PFKM)	WI 7025	G06359	Forward Primer: TCCACATCTTCTCAGTGTTTTAGC Reverse Primer: TCACAGTGACCAGTTGGCAT	63 64
33.	ATP synthase lipid binding protein P2 precursor	SHGC 10801	G13455	Forward Primer: CCCGTGTGTTCCTTTTCCTA Reverse Primer: AGGCACTCAGCCAACTGTG	65 66
34.	Mevalonate kinase	A001U02	G19646	Forward Primer: GTACAGATCGGAAGAAAGT Reverse Primer: CCTTCCCTTCTACCTAAC	67 68